

WHAT IS CLAIM IS

- Sub A1
1. Source-antenna for transmitting/receiving electromagnetic waves comprising an array of  $n$  radiating elements operating in a first frequency band, an element with longitudinal radiation operating in a second frequency band and situated at the centre of the array, the array of  $n$  radiating elements and the element with longitudinal radiation having a substantially common phase centre, the  $n$  radiating elements being arranged symmetrically about the longitudinal-radiation element, wherein each element of the array consists of a radiating element of the travelling wave type.
2. Source-antenna according to Claim 1, characterized in that the radiating element of the travelling wave type is a helical device.
3. Source-antenna according to Claim 2, characterized in that the length of the helical device is calculated in such a way that the radiation pattern of the array is substantially identical to the radiation pattern of the said helical device.
4. Source-antenna according to Claim 2, characterized in that the helical devices are arranged so as to form a sequential-rotation array.
5. Source-antenna according to Claim 1, characterized in that the array of  $n$  radiating elements is excited by a feed array of printed type.
6. Source-antenna according to Claim 1, characterized in that  $n$  is equal to 4.
7. Source-antenna according to Claim 1, characterized in that  $n$  is equal to 8.
8. Source-antenna according to Claim 1, characterized in that the longitudinal-radiation element comprises a longitudinal-radiation dielectric rod with axis coinciding with the axis of radiation.
9. Source-antenna according to Claim 1, characterized in that the longitudinal-radiation element comprises a helical device with axis coinciding with the axis of radiation.
10. Source-antenna according to Claim 7, characterized in that the longitudinal-radiation element is excited by means comprising a waveguide.

11. Source-antenna according to Claim 8, characterized in that the longitudinal-radiation element is excited by means comprising a waveguide.

12. Source-antenna according to Claims 1, characterized in that  
5 one of the two frequency bands is used for the reception of electromagnetic waves whilst the other frequency band is used for the transmission of electromagnetic waves.

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